

The Claims:

1. A scaffold for at least one of: tissue regeneration and bone growth, the scaffold being fabricated from at least two polymers, the polymers being of differing rates of biodegradability.
2. A scaffold for at least one of: tissue regeneration and bone growth; the scaffold being fabricated from at least two polymers; a first polymer of the at least two polymers being able to be leached by a solvent, and all other polymers of the at least two polymers being selected from the group consisting of: inert to the solvent, and having a lower dissolution rate in the solvent.
3. A scaffold for at least one of: tissue regeneration and bone growth; the scaffold having a graded porosity with high porosity at a surface of the scaffold, and low porosity at a core of the scaffold.
4. A scaffold as claimed in claim 3, wherein the scaffold is fabricated from at least two polymers of differing rates of biodegradability.
5. A scaffold as claimed in claim 3, wherein the scaffold is fabricated from at least two polymers, a first polymer of the at least two polymers being able to be leached by a solvent, and all other polymers of the at least two polymers being selected from the group consisting of: inert to the solvent, and having a lower dissolution rate in the solvent.
6. A scaffold as claimed in claim 4, wherein a first polymer of the at least two polymers is able to be leached by a solvent, and all other polymers of the at least two polymers are selected from the group consisting of: inert to the solvent, and having a lower dissolution rate in the solvent.
7. A scaffold as claimed in claim 1, wherein a first polymer of the at least two polymers is able to be leached by a solvent, and all other polymers of the at least two polymers are selected from the group consisting of: inert to the solvent, and having a lower dissolution rate in the solvent.
8. A scaffold as claimed in claim 1 or claim 7, wherein the scaffold has a graded porosity with high porosity at a surface of the scaffold, and low porosity at a core of the scaffold.

9. A scaffold as claimed in any one of claims 1, 2, or 4 to 8, wherein the at least two polymers are selected from the group consisting of: natural polymers, a blend of natural polymers and synthetic polymers, synthetic polymers, polyglycolide, polylactide, poly L-lactide, poly DL-lactide, polylactide co-glycolide, poly- ϵ -caprolactone, and polyhydroxybutrate.
10. A scaffold as claimed in any one of claims 2, 5, 6 or 7, wherein the solvent is selected from the group consisting of: organic solvent, and inorganic solvent.
11. A scaffold as claimed in claim 10, wherein the organic solvent is selected from the group consisting of: acetone, dichloromethane, hex-fluoroisopropanol, chloroform, and alcohol.
12. A scaffold as claimed in any one of claims 1, 2, or 4 to 9, wherein there are two polymers in a ratio in the range 60:40 to 30:70.
13. A method of fabrication of a scaffold for at least one of: tissue regeneration and bone growth; the method comprising:
 - (a) blending at least two polymers to form a polymer blend;
 - (b) forming the scaffold from the polymer blend;
 - (c) leaching the scaffold using a solvent to remove a first polymer of the at least two polymers, all other polymers of the at least two polymers being inert to the solvent.
14. A method as claimed in claim 13, wherein all polymers of the at least two polymers all have a different rate of biodegradability.
15. A method as claimed in claim 13 or claim 14, wherein there are two polymers in a ratio in the range 60:40 to 30:70.
16. A method as claimed in any one of claims 13 to 15, wherein the at least two polymers are selected from the group consisting of: natural polymers, a blend of natural polymers and synthetic polymers, synthetic polymers, polyglycolide, polylactide, poly L-lactide, poly DL-lactide, polylactide co-glycolide, poly caprolactone, and polyhydroxybutrate.
17. A method as claimed in any one of claims 13 to 16, wherein the solvent is selected from the group consisting of: acetone, dichloromethane, hexfluoroisopropanol, chloroform, and alcohol.

18. A method as claimed in any one of claims 13 to 17, wherein the forming is by at least one method selected from the group consisting of: compression moulding, injection molding, rapid prototyping, and three dimensional printing.
19. A method as claimed in claim 18, wherein compression moulding is at a pressure in the range 0 to 20 Mpa, and at a temperature in the range 25°C to 80°C.
20. A method as claimed in any one of claims 13 to 19, wherein leaching is controlled so that leaching is maximized at a surface of the scaffold, and minimized at a core of the scaffold.
21. A method as claimed in claim 14, wherein the first polymer has a faster rate of bio-degradability.
22. A method as claimed in any one of claims 13 to 21, wherein leaching is in an ultrasonic bath of the solvent.
23. A method as claimed in claim 22, wherein the solvent is at a temperature in the range 25°C to 50°C, frequencies being in the range 1KHz to 40KHz, and exposure time being in the range 5 minutes to 120 minutes.
24. A method as claimed in any one of claims 13 to 23, wherein the at least two polymers are milled prior to blending, milling and blending being in a cryogenic mill to form a particle size in the range 20 to 500µm.
25. A method as claimed in claim 24, wherein the milling is at a cycle dependant upon at least one of: the type of the at least two polymers, and a desired particle size of the at least two polymers.
26. A method as claimed in claim 24 or claim 25, wherein milling is at a frequency in the range 15 to 30 cycles of one minute each.
27. A method as claimed in any one of claims 24 to 26, wherein during milling, an impaction rate is 15 impacts/second.
28. A method as claimed in any one of claims 13 to 27, wherein the scaffold has a graded porosity with a high porosity at a surface of the scaffold, and a low porosity at a core of the scaffold.

29. A method as claimed in any one of claims 13 to 28, wherein leaching includes: removal, and dissolution.
30. A scaffold when fabricated by the method of any one of claims 13 to 29.
31. A scaffold as claimed in claim 2, any one of claims 5 to 12, or claim 30, wherein leaching includes: removal, and dissolution.